DIRECT TESTIMONY OF

NATHAN V. BASS, PLA

ON BEHALF OF

DOMINION ENERGY SOUTH CAROLINA, INC.

DOCKET NO. 2020-43-E

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Nathan V. Bass. My business address is 123 North White Street, Fort Mill, South Carolina 29715.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Pike Engineering, LLC ("Pike Engineering"), a wholly owned subsidiary of Pike Corporation, as Manager of the Facilities Planning & Siting ("FPS") division. Pike Engineering—with approximately 1,380 employees in 29 offices located in 13 states—provides electrical transmission and distribution systems planning, siting, permitting, engineering and project management services to electrical utility clients throughout the United States.

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND, PROFESSIONAL ASSOCIATIONS, AND BUSINESS EXPERIENCE.

From North Carolina State University, I received a Bachelor of Science degree in horticulture with a concentration in landscape design in 2008 and a Master of Landscape Architecture degree in 2010. I was employed by Pike Energy Solutions, LLC (now known as Pike Engineering, LLC) as a landscape architect in the FPS division in February 2011 and became manager of that division in January 2017. As manager of FPS, I am responsible for directing the division's delivery of services that include siting electrical transmission lines and substations, civil engineering (specifically, civil site design and stormwater management planning and design), environmental assessments and planning, visual impact studies and mitigation planning, cultural resource studies, landscape architectural planning and design and project permitting and licensing.

Since 1987, the FPS division, which was previously a department within Duke Energy, has executed and managed the successful siting, permitting and licensing of hundreds of transmission line projects, virtually all of which are located in North and South Carolina. I served as the FPS project manager for the services rendered to Dominion Energy South Carolina, Inc. ("DESC"), then known as South Carolina Electric & Gas Company, on the Graniteville #2 – South Augusta 230 kV Tie Line and Urquhart – Graniteville 230 kV Line

project, and the Pepperhill – Summerville 230 kV Line, the Williams – Pepperhill 230 kV Line Segment, and the Canadys – Faber Place 230 kV Line Segment project, and have personally participated in dozens of transmission line siting and permitting projects.

I am a licensed professional landscape architect in the states of South Carolina and North Carolina.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to discuss the transmission line siting methodology that DESC, in collaboration with FPS, utilized to evaluate the route for the Toolebeck – Aiken 230 kV Tie and Segments of the Graniteville #2 – Toolebeck 230 kV and Toolebeck – South Augusta 230 kV Tie (collectively, the "Lines") and associated facilities in Aiken County, South Carolina. My company conducted studies, compiled data and analyzed extensive information regarding environmental, land use, cultural resource, and visual effects, if any, that will result from constructing the proposed Lines.

Q. DO YOU HAVE ANY DOCUMENTS THAT SUPPORT OR ILLUSTRATE YOUR TESTIMONY?

A. Yes. As DESC's siting and project permitting consultant, I am the author of the *Transmission Line Siting and Environmental Report for the Toolebeck – Aiken 230 kV Tie and Segments of the Graniteville #2 – Toolebeck*

230 kV and Toolebeck – South Augusta 230 kV Tie and Associated Facilities, dated January 2020 and attached to this testimony as Exhibit No. __ (NVB-1) ("Transmission Line Siting and Environmental Report"). The Transmission Line Siting and Environmental Report details the research and studies conducted regarding the environmental, land use, cultural resource, and visual effects of the Lines and the associated facilities. Please note that, in the first sentence of Section 1.3 on page 8 of the Transmission Line Siting and Environmental Report that was attached to the Company's Application in the docket as Exhibit A, the reference to "Town Creek – Aiken 230 kV Tie" should have read "Toolebeck – Aiken 230 kV Tie." A corrected page 8 reflecting this revision has been included in Exhibit No. ___ (NVB-1).

Q. PLEASE DESCRIBE THE ROUTE FOR THE PROPOSED LINES.

A. The Toolebeck – Aiken 230 kV Tie will originate at the upgraded and renamed Toolebeck Transmission Substation and run approximately 7.2 miles northeast to the Interconnection Point with South Carolina Public Service Authority ("SCPSA"). SCPSA will construct and own the approximate 0.7 miles of new 230 kV line from the Interconnection Point to SCPSA's existing Aiken Substation.

The Urquhart Junction, located approximately ten miles southwest of Aiken and six miles east of the Savannah River, is the convergence point where multiple 230 kV and 115 kV lines, including the existing Graniteville #2 –

South Augusta 230 kV Tie, intersect on the DESC system. Beginning at the Urquhart Junction, the Graniteville #2 – South Augusta 230 kV Tie will be folded into the Toolebeck Transmission Substation and renamed the Graniteville #2 – Toolebeck 230 kV and the Toolebeck – South Augusta 230 kV Tie. These two newly designated 230 kV lines will run for approximately 0.1 miles due east across new right-of-way at Urquhart Junction and then enter another existing DESC corridor and run northeast for an additional 10.5 miles within the existing corridor to the Toolebeck Transmission Substation.

Q. WILL THE PROPOSED LINES AND ASSOCIATED FACILITIES HAVE ANY SIGNIFICANT SHORT- OR LONG-TERM ENVIRONMENTAL IMPACTS?

A. No. As explained in more detail in the Transmission Line Siting and Environmental Report, the construction and operation of the Lines will not have any significant short- or long-term impacts on the environment.

Q. WHAT WAS THE CONCLUSION OF THE STUDIES THAT WERE CONDUCTED FOR LINES AND ASSOCIATED FACILITIES TO DETERMINE EFFECTS TO RARE, THREATENED AND ENDANGERED SPECIES?

A. Palmetto Environmental Consulting, Inc. ("PEC") conducted a protected species literature and records search in September 2019 to determine the

presence of known occurrences of federally- and state-listed animal and plant species on or within one mile of the right-of-way within which the Lines will be located. The literature and records search revealed no known occurrences of federally- or state-listed species within one mile of the right-of-way. Coordination with the South Carolina Department of Natural Resources, however, revealed an occurrence of winter grape-fern is located 0.5 miles from the right-of-way, though the specific location was not provided.

DESC also engaged PEC to inspect the Lines' route to verify the presence or absence of state- and/or federal-listed threatened and endangered species, and none were found during a September – October 2019 field investigation along the existing and new right-of-way.

Due to the absence of protected species in the existing and proposed right-of-way, and due to no changes in potential habitat for listed species except for a minor amount of vegetative clearing associated with maintaining existing right-of-way and the additional right-of-way at Urquhart Junction, adjacent to the Toolebeck Transmission Substation, and at the Interconnection Point with SCPSA, no adverse effects to rare, threatened or endangered animal or plant species will occur as a result of construction and operation of the Lines.

Q. PLEASE DESCRIBE THE IMPACTS TO WETLANDS OR STREAMS, IF ANY, THAT WILL RESULT FROM CONSTRUCTION AND OPERATION OF THE LINES AND ASSOCIATED FACILITIES.

A. Based on wetland surveys and delineations conducted by PEC in September and October 2019, approximately 12.2 acres of wetlands and approximately 0.8 acres of open water reside in the existing and proposed right-of-way within which the Lines will be built. Also, approximately 1,160 linear feet of stream channels are present in the right-of-way. Because of the measures DESC takes to protect wetlands, stream buffer zones, streams and open waters during transmission line construction, minimal, if any, short-term and no longer-term impacts to wetlands or streams will occur.

No structures will be placed in open water or streams and only one navigable water will be crossed by the Lines. To the extent practical, DESC will design the Lines to span wetlands; however, where structures may be required in wetlands, access to them for construction purposes will be accomplished on mats, and no permanent roads will be constructed in the wetlands. No filling or clearing will occur in wetlands or stream buffer zones.

Q. WHAT WAS THE CONCLUSION OF THE CULTURAL RESOURCE INVESTIGATION THAT WAS CONDUCTED ALONG THE ROUTE OF THE LINES AND ASSOCIATED FACILITIES?

A. Pike Engineering, on DESC's behalf, engaged Brockington and Associates, Inc. ("Brockington") to conduct a cultural resource records review and windshield reconnaissance survey and a Phase I archaeological investigation in September and October 2019.

Brockington conducted background research to identify all previously recorded archaeological and architectural resources that reside within 1.25 miles of the Lines' route. Of the 31 previously recorded archaeological sites within 1.25 miles of the Lines' route, Brockington determined that none of them will be affected by construction of the Lines because none are located within the existing or new DESC right-of-way. Seventy-one previously recorded architectural resources were identified within 1.25 miles of the Line's route during the background research.

After completing the background research, Brockington conducted the Phase I archaeological investigation in September and October 2019 in the existing right-of-way within which the Project Lines will be located. The investigation included shovel test excavations at 30-meter intervals that led to the identification of one previously unrecorded archaeological resource, an isolated historic artifact scatter, within the existing right-of-way of the Lines' route. According to Brockington, isolated finds are generally not eligible for

the National Register of Historic Places ("NRHP"), and the context of the isolated find within the Lines' right-of-way do not support an argument for recommending it otherwise. Brockington's field survey identified conditions not optimal for intact archaeological sites, including that most of the project corridor has been disturbed by development with some areas situated in low-lying drainages with hydric soils. Brockington, therefore, determined that the project will have no adverse effects on archaeological resources in the existing or new right-of-way of the proposed Lines. Brockington submitted the findings of the Phase I archaeological investigation to the State Historic Preservation Office ("SHPO") in a report entitled *Phase I Intensive Archaeological Resources Survey for the Toolebeck – Aiken 230 kV Tie and a Portion of the Graniteville #2 – Toolebeck 230 kV and Toolebeck – South Augusta 230 kV Tie and Associated Facilities*, dated December 2019. The SHPO issued a letter on January 15, 2020, agreeing that Brockington's cultural resources survey was sufficient and that no additional archaeological studies were necessary. Given the systematic approach DESC has executed to date and will exercise during construction of the Lines to identify and protect archaeological resources, no adverse impacts are anticipated.

The scope of Brockington's work also included a windshield reconnaissance survey to inspect previously recorded architectural resources within 1.25 miles of the Lines' route that appear potentially eligible for listing in the NRHP. During the windshield reconnaissance survey conducted in

September 2019, Brockington visited each of the 71 previously recorded architectural resources. Brockington determined that 18 of the documented resources no longer existed and that none of the remaining 53 previously recorded sites were located within the existing or proposed right-of-way in which the Lines are to be built. Of the 53 remaining sites, only six were determined to be eligible or potentially eligible for the NRHP. Brockington identified no previously unrecorded individual resources with sufficient architectural integrity to be considered eligible for listing in the NRHP. Brockington submitted a letter report, entitled *Literature Review and Reconnaissance of the Proposed Toolebeck – Aiken 230 kV Tie and Segments of the Graniteville #2 – Toolebeck 230 kV and Toolebeck – South Augusta 230 kV Tie and Associated Facilities*, to the SHPO on January 16, 2020.

Regarding architectural properties, Brockington recommended that the visual effects of the Lines be considered and that, when possible, DESC avoid where the construction will result in adverse effects to viewsheds of any NRHP listed or NRHP eligible resources. Pursuant to this recommendation, Pike Engineering, working closely with Brockington on DESC's behalf, conducted a viewshed analysis to determine specific locations within 1.25 miles of the Lines' route where views of the future Lines may be possible. The analysis, which is described in a visual impact report prepared by Pike Engineering entitled *Historic Structures and Visual Impact Assessment Report for the Toolebeck – Aiken 230 kV Tie and Segments of the Graniteville #2 – Toolebeck*

230 kV and Toolebeck – South Augusta 230 kV Tie and Associated Facilities, was based on conservative assumptions regarding locations and heights of the new 230 kV transmission line structures that will be utilized. Computer modeling was completed based on the top elevation of each new line structure, taking into consideration topography and vegetation. This exercise yielded mapping for each of the five NRHP eligible and one NRHP potentially eligible resources that indicated the probability, or lack thereof, that views of the Lines would be possible from the individual resources. Following the computerized view probability analysis, Pike Engineering visited each of the six resources that were analyzed in the viewshed analysis to confirm the accuracy of the predicted probability. Of the six resources assessed during the Visual Impact Analysis, it was determined that none of them will have potential views or will be adversely affected by the Lines. After reviewing Brockington's windshield reconnaissance survey report, Pike's visual impact report, and gaining further understanding of the extent that Brockington studied the area, the SHPO agreed that no additional survey or assessment is necessary in an email dated February 13, 2020.

Q. WHAT WILL BE THE VISUAL EFFECTS OF THE PROPOSED LINES AND ASSOCIATED FACILITIES?

A. The Lines will have very low overall visual effects for the following reasons:

- With the exception of only 0.2 miles of new right-of-way clearing, the Lines will be built within an existing DESC right-of-way and will, therefore, not pose any significant visual modifications resulting from right-of-way clearing;
- The Lines will share an existing DESC right-of-way, parallel, or be adjacent to existing DESC, SCPSA, or Central Electric Cooperative transmission lines for the Lines' entire length; and
- Significant portions of the Lines' route will traverse undeveloped areas where existing trees on each side of the right-of-way will provide significant screening or areas where the encroaching adjacent development has retained a vegetative buffer along the existing transmission corridor.

It is my professional opinion that the Lines and associated facilities will have no significant adverse visual effects to the region.

Q. IS THE IMPACT OF THE PROPOSED LINES AND ASSOCIATED FACILITIES UPON THE ENVIRONMENT JUSTIFIED CONSIDERING THE STATE OF AVAILABLE TECHNOLOGY AND THE NATURE AND ECONOMICS OF THE VARIOUS ALTERNATIVES?

A. Yes. Because DESC has made the decision to build the Lines almost entirely within existing DESC right-of-way, the resulting environmental, land use, cultural resource, and aesthetic effects are minimized. Moreover, as

Witness Parker states in his testimony, DESC considered several alternatives to the proposed Lines and associated facilities and determined that the proposed facilities are the superior solution to provide its customers with long-term electrical system reliability.

Q. IN YOUR PROFESSIONAL JUDGMENT, WAS DESC'S DECISION TO USE THE EXISTING RIGHT-OF-WAY ROUTE, INSTEAD OF EVALUATING OTHER GREENFIELD ROUTES, FOR THE LINES PROPER?

A. Yes. In my professional judgment, DESC's decision to use the existing right-of-way route for the Lines was proper.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.